Behnam Esmayli
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Date: Tuesday, October 6

Time: 12:00 - 12:50 pm, EDT

Location: Zoom, ID: 935 1032 7072

Behnam started his PhD at Pitt in August 2015. He hopes to defend his thesis in Summer 2021 and plans to continue with a post-doc in his field. Behnam’s primary research is in geometric measure theory – where analysis and geometry meet. He loves the teaching aspect of his job as much as math itself!

If $n < m$ and $f : \mathbb{R}^n \to \mathbb{R}^m$ is an injective (and reasonably nice) function then image of $f$ is an $n$-dimensional object sitting inside the larger $\mathbb{R}^m$. Examples: a curve or surface in $\mathbb{R}^3$. But what if we turn the tables and consider functions $f : \mathbb{R}^m \to \mathbb{R}^n$ where $m > n$? There is just not enough room and many points must map to a common target point. In this talk I will explain the precise mathematical meaning of the following and end with the Coarea Inequality:

If $m > n$, and $f : \mathbb{R}^m \to \mathbb{R}^n$ is Lipschitz, then for almost every $y \in \mathbb{R}^n$, the set of points that map to $\{y\}$ is $(m - n)$-dimensional.

SPEAKER(S) FOR NEXT WEEK:
Dr. Cezar Lupu

Organized by: Derek Orr, Tom Everest, Jeremiah Morgan, and Jeff Wheeler